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OWENS CORNING 2790 COLUMBUS ROAD GRANVILLE, OH 43023				
EXAMINER DANIELS, MATTHEW J				
ART UNIT		PAPER NUMBER		
1732				

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,988

Applicant(s)

THOMAS, DAVID W.

Examiner

Matthew J. Daniels

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1 October 2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 22 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of Claim 21. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically, Claim 22 is more broad than Claim 21, and therefore fails to further limit the subject matter of Claim 21.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). **As to Claim 1**, Brossy teaches a method for manufacturing smooth surface board from fibrous material (Col. 2, Line 41-47), the method comprising the steps of: moving fibrous material through an oven on a first conveyor assembly to produce a board of fibrous material (Col. 5, Line 20-25), the first conveyor assembly including a first upper conveyor and a first lower conveyor (Col. 5, Line 20-25); passing the fibrous material through the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor (Col. 3, Line 5-14), causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor (Col. 3, Line

13-15), and thereby resulting in a smooth surface board (Col. 6, Line 35-42). Brossy is silent to pulling the board of fibrous material from the oven with a pulling apparatus downstream of the oven. Barry teaches pulling a board of fibrous material (Col. 4, Line 25-38) from the oven with a pulling apparatus downstream of the oven (Col. 5, Line 1-5). The references are properly combinable because both are directed to an apparatus for producing sheets of rigid fibrous boards with a smooth surface. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to combine the pulling apparatus of Barry in the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 15**, Brossy teaches that which is set forth above in the rejection of Claim 1 under 35 U.S.C. 103(a). Brossy additionally teaches driving one of the first upper conveyor and the first lower conveyor at a speed faster relative to the other of the first upper conveyor and the first lower conveyor (Col. 5, Line 5-10). Brossy is silent to pulling the board of fibrous material from the oven with a pulling apparatus downstream of the oven. Barry teaches that which is set forth above in the rejection of Claim 1 under 35 U.S.C. 103(a). The references are properly combinable because both are directed to an apparatus for producing sheets of rigid fibrous boards with a smooth surface. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to combine the pulling apparatus of Barry in the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

3. **Claims 2 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a).

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As to **Claim 2**, Brossy is silent to the pulling apparatus applying pressure to a surface of the fibrous material. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull the board through the oven. The examiner takes the position that the pulling rollers taught by Barry inherently apply pressure to a surface of the fibrous material because without pressure, there would be no frictional force between the roller and the board, and the pulling action would be absent. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus applies pressure to a surface of the fibrous material, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

As to **Claim 16**, Brossy and Barry teach that which is set forth above in the rejection of Claim 2 under 35 U.S.C. 103(a). The examiner takes the position that the pulling rollers taught by Barry inherently apply pressure to a surface of the fibrous material because without pressure, there would be no frictional force between the roller and the board, and the pulling action would be absent. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus applies pressure to a surface of the fibrous material, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

4. **Claims 3 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). As to **Claim 3**, Brossy is silent to the pulling apparatus applying pressure being sufficient to prevent skidding of the fibrous material within the pulling apparatus. Barry teaches pulling

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rollers (Fig. 1, Items 18 and 19) which pull the fibrous board through the oven. The examiner takes the position that the rollers taught by Barry inherently applied sufficient pressure to prevent skidding because without sufficient pressure to prevent skidding, the pulling action would be absent. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus applies pressure to a surface of the fibrous material, the pressure being sufficient to prevent skidding of the fibrous material within the pulling apparatus, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 17**, Brossy is silent to the pulling apparatus applying pressure being sufficient to prevent skidding of the fibrous material within the pulling apparatus. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull the fibrous board through the oven. The examiner takes the position that the rollers taught by Barry inherently applied sufficient pressure to prevent skidding because without sufficient pressure to prevent skidding, the pulling action would be absent. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus applies pressure to a surface of the fibrous material, the pressure being sufficient to prevent skidding of the fibrous material within the pulling apparatus, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

5. **Claims 4 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a).

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As to Claim 4, Brossy is silent to a pulling apparatus comprising a second conveyor assembly including a second upper conveyor and a second lower conveyor. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. The examiner takes the position that the rollers taught by Barry are conveyors, and the pulling apparatus comprises a second upper conveyor and a second lower conveyor. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus comprises a second conveyor assembly including a second upper conveyor and a second lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

As to Claim 17, Brossy is silent to a pulling apparatus comprising a second conveyor assembly including a second upper conveyor and a second lower conveyor. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. The examiner takes the position that the rollers taught by Barry are conveyors, and the pulling apparatus comprises a second upper conveyor and a second lower conveyor. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus comprises a second conveyor assembly including a second upper conveyor and a second lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

6. **Claims 5 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a).

As to Claim 5, Brossy teaches conveying a board of fibrous material at a speed faster than the

speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14). Brossy is silent to a pulling apparatus pulling the board of fibrous material. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus pulls the board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and the first lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 19**, Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14). Brossy is silent to a pulling apparatus pulling the board of fibrous material. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus pulls the board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and the first lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

7. **Claims 6 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 6**, Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14).

Brossy is silent to a pulling apparatus pulling the board of fibrous material at a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor. Brossy additionally teaches in Col. 3, Line 10 that one method of realizing the invention is to make the lead conveyor the faster conveyor. The examiner takes the position that it would have been obvious to one of ordinary skill to make the alternative choice to make the lead conveyor the slower conveyor and smooth with the fast conveyor side because doing so would avoid buildup of fiber upstream of the conveyor assembly. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus pulls the board of fibrous material at a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 20**, Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14). Brossy is silent to a pulling apparatus pulling the board of fibrous material at a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor. Brossy additionally teaches in Col. 3, Line 10 that one method of realizing the invention is to make the lead conveyor the faster conveyor. The examiner takes the position that it would have been obvious to one of ordinary skill to make the alternative choice to make the lead conveyor the slower conveyor and smooth with the fast conveyor side because doing so would avoid buildup of fiber upstream of the conveyor assembly. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. Therefore, it would have been prima facie obvious to one of ordinary skill in

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the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus pulls the board of fibrous material at a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

8. **Claims 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559) and Debouzie (USPN 4,632,685). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 7**, Brossy teaches conveying a board of fibrous material at a speed different than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14) causing the fibrous material in the oven to slip relative to a surface of one of the first conveyors. Brossy and Barry are silent to pulling the boards of fibrous material at a speed different relative both the first upper conveyor and the first lower conveyor. However, Debouzie teaches employing a series of conveyors wherein the pulling apparatus pulls the board of fibrous material at a speed different than the speed of both the first upper conveyor and first lower conveyor (Col. 8, Line 55-57) to produce a longitudinal compression, which produces a thicker mat that resists compression and tearing in the direction of the thickness. It would have been obvious to one of ordinary skill in the art at the time of the invention that a fibrous mat that resists compression and tearing in the direction of the thickness would have been useful in a multitude of applications such as insulation, ceiling tiles, floor tiles, acoustic paneling, and vehicle headliners. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use the pulling apparatus of Debouzie, and pulling

the board of fibrous material at a speed different than the speed of both the first upper conveyor and first lower conveyor, in the apparatus of Brossy and Barry to achieve the same longitudinal compression that would impart useful characteristics to the board such as improved resistance to compression and tearing in the direction of the thickness, as taught by Debouzie.

9. **Claims 8, 21 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559) and Debouzie (USPN 4,632,685). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). Brossy in view of Barry and Debouzie teaches the subject matter of Claim 7. See the rejection of Claim 7 under 35 U.S.C. 103(a). **As to Claim 8**, Brossy, Barry, and Debouzie are silent to the pulling apparatus pulling the board of fibrous material at a speed faster than the speed of both the first upper conveyor and first lower conveyor. Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14) causing the fibrous material in the oven to slip relative to a surface of one of the first conveyors, producing a smoothing effect. Brossy further teaches gluing a glass fiber skin to the opposite side of the board in a separate operation (Col. 4, Line 43) in order to avoid the risk of driving the mineral wool mattress by both conveyors alternately. Barry teaches pulling the board of fibrous material through an oven (Fig. 1) with pulling rollers. Brossy and Barry are silent to pulling the board of fibrous material at a speed faster relative both the first upper conveyor and the first lower conveyor. It would have been desirable to one of ordinary skill in the art that both faces of the board be smoothed to facilitate easier handling and make the board more aesthetically pleasing. It would have also been obvious to one of ordinary skill in the art at the time of the

invention that the separate gluing operation taught by Brossy could be eliminated if both faces could be smoothed in the same operation. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that this dual smoothing action could be achieved by combining the pulling apparatus of Barry in the apparatus of Brossy and pulling the board of fibrous material at a speed faster relative to both the first upper conveyor and the first lower conveyor in order to cause the fibrous material in the oven to slip relative to a surface of the first upper conveyor and a surface of the first lower conveyor such that the opposing faces of the fibrous material are smoothed because doing so would smooth both faces of the board at the same time and allow removal of the separate gluing operation for finishing the second face of the board, as well as producing a fibrous board with higher longitudinal strength. **As to Claim 21,** Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14) causing the fibrous material in the oven to slip relative to a surface of one of the first conveyors. Brossy further teaches gluing a glass fiber skin to the opposite side of the board in a separate operation (Col. 4, Line 43) in order to avoid the risk of driving the mineral wool mattress by both conveyors alternately. Barry teaches pulling the board of fibrous material through an oven (Fig. 1). Brossy and Barry are silent to pulling the board of fibrous material at a speed faster relative both the first upper conveyor and the first lower conveyor. It would have been obvious to one of ordinary skill to pull the board at a speed faster relative to both the first upper conveyor and the first lower conveyor in order to produce a thinner sheet with oriented fibers for use in confined areas or lightweight applications where a high longitudinal strength was beneficial. It would have also been desirable to one of ordinary skill in the art that both faces of the board be smoothed to facilitate easier handling and make the board more aesthetically pleasing.

Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to combine the pulling apparatus of Barry in the apparatus of Brossy and pull the board of fibrous material at a speed faster relative to both the first upper conveyor and the first lower conveyor in order to cause the fibrous material in the oven to slip relative to a surface of the first upper conveyor and a surface of the first lower conveyor such that the opposing faces of the fibrous material are smoothed because doing so would smooth both faces of the board and allow removal of the separate gluing operation for finishing the second face of the board and produce a thinner sheet with higher longitudinal strength. As to Claim 22, Brossy, Barry, and Debouzie are silent to the pulling apparatus pulls the board of fibrous material at a speed faster than the speed of both the first upper conveyor and first lower conveyor. Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14) causing the fibrous material in the oven to slip relative to a surface of one of the first conveyors, producing a smoothing effect. Brossy further teaches gluing a glass fiber skin to the opposite side of the board in a separate operation (Col. 4, Line 43) in order to avoid the risk of driving the mineral wool mattress by both conveyors alternately. Barry teaches pulling the board of fibrous material through an oven (Fig. 1) with pulling rollers. Brossy and Barry are silent to pulling the board of fibrous material at a speed faster relative both the first upper conveyor and the first lower conveyor. It would have been desirable to one of ordinary skill in the art that both faces of the board be smoothed to facilitate easier handling and make the board more aesthetically pleasing. It would have also been obvious to one of ordinary skill in the art at the time of the invention that the separate gluing operation taught by Brossy could be eliminated if both faces could be smoothed in the same operation. It would have been prima facie obvious to one of ordinary skill in the art at the

time of the invention that this dual smoothing action could be achieved by combining the pulling apparatus of Barry in the apparatus of Brossy and pulling the board of fibrous material at a speed faster relative to both the first upper conveyor and the first lower conveyor in order to cause the fibrous material in the oven to slip relative to a surface of the first upper conveyor and a surface of the first lower conveyor such that the opposing faces of the fibrous material are smoothed because doing so would smooth both faces of the board at the same time and allow removal of the separate gluing operation for finishing the second face of the board, as well as producing a fibrous board with a higher longitudinal strength.

10. **Claims 9 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559) and Debouzie (USPN 4,632,685).

Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). Brossy in view of Barry and Debouzie teaches the subject matter of Claims 7 and 21. See the rejection of Claims 7 and 21 under 35 U.S.C. 103(a). **As to Claim 9**, Brossy and Barry are silent to the pulling apparatus pulling the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor. Debouzie teaches employing a series of conveyors wherein the pulling apparatus pulls the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor (Col. 8, Line 55-57) to produce a longitudinal compression, which produces a thicker mat that resists compression and tearing in the direction of the thickness. It would have been obvious to one of ordinary skill in the art at the time of the invention that a fibrous mat that resists compression and tearing in the direction of the thickness would have been useful in a multitude of applications such as insulation, ceiling tiles, floor tiles, acoustic paneling,

and vehicle headliners. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use the pulling apparatus of Debouzie, and pulling the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor, in the apparatus of Brossy and Barry to achieve the same longitudinal compression that would impart useful characteristics to the board such as improved resistance to compression and tearing in the direction of the thickness, as taught by Debouzie. **As to Claim 23**, Brossy and Barry are silent to the pulling apparatus pulling the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor. Debouzie teaches employing a series of conveyors wherein the pulling apparatus pulls the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor (Col. 8, Line 55-57) to produce a longitudinal compression, which produces a thicker mat that resists compression and tearing in the direction of the thickness. It would have been obvious to one of ordinary skill in the art at the time of the invention that a fibrous mat that resists compression and tearing in the direction of the thickness would have been useful in a multitude of applications such as insulation, ceiling tiles, floor tiles, acoustic paneling, and vehicle headliners. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use the pulling apparatus of Debouzie, pulling the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor, in the apparatus of Brossy and Barry to achieve the same longitudinal compression that would impart useful characteristics to the board such as improved resistance to compression and tearing in the direction of the thickness, as taught by Debouzie.

11. **Claims 10 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 10**, Brossy teaches (Col. 2, Line 40-47) a mineral wool product. The fibrous mineral material sought by applicant in Claim 10 was prima facie obvious at the time of the invention. **As to Claim 24**, Brossy teaches (Col. 2, Line 40-47) a mineral wool product. The fibrous mineral material sought by applicant in Claim 10 was prima facie obvious at the time of the invention.

12. **Claims 11 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559), and further in view of Mazza (USPN 5,843,523). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 11**, Brossy is silent to the pulling apparatus comprising a spiked wheel. Mazza teaches (Col. 7, Line 5-6) a driven spike roller for pulling material. The references are properly combined because both are directed to conveying a continuous web of fibers and application of a stiffening agent. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to combine the spiked wheel of Mazza with the apparatus of Brossy to provide enhanced gripping of the fibrous web because enhanced gripping would result in further oriented fibers and an improved degree of smoothing. **As to Claim 25**, Brossy is silent to the pulling apparatus comprising a spiked wheel. Mazza teaches that which is set forth above. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the spiked wheel of Mazza with the

apparatus of Brossy to provide enhanced gripping of the fibrous web because enhanced gripping would result in further oriented fibers and an improved degree of smoothing.

13. **Claims 12 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 12**, Brossy teaches (Col. 5, Line 23-29) surfaces of the first upper and first lower conveyor are foraminous. Therefore, the foraminous surfaces sought by applicant in Claim 12 were prima facie obvious to one of ordinary skill at the time of the invention. **As to Claim 26**, Brossy teaches (Col. 5, Line 23-29) surfaces of the first upper and first lower conveyor are foraminous. Therefore, the foraminous surfaces sought by applicant in Claim 26 were prima facie obvious to one of ordinary skill at the time of the invention.

14. **Claims 13 and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 13**, Brossy teaches conveyors that no longer define strictly even surfaces after replacement of individual pallets due to wear or fouling (Col. 5, Line 38-42). The examiner takes the position that at a time before replacement of pallets, the conveyors would have defined even surfaces that were substantially smooth in order for Brossy to teach the distinction between these states. It would have also been obvious to one of ordinary skill that in order to perform surface smoothing as taught by Brossy, a substantially smooth surface would be required to avoid displacing fibers from the plane of the board and thereby roughening the board. Therefore,

it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the surfaces of the first upper conveyor and the first lower conveyor be substantially smooth in order to create a smoothed surface on the board. **As to Claim 27**, Brossy teaches conveyors that no longer define strictly even surfaces after replacement of individual pallets due to wear or fouling (Col. 5, Line 38-42). The examiner takes the position that at a time before replacement of pallets, the conveyors would have defined even surfaces that were substantially smooth in order for Brossy to teach the distinction between these states. It would have also been obvious to one of ordinary skill that in order to perform surface smoothing as taught by Brossy, a substantially smooth surface would be required to avoid displacing fibers from the plane of the board and thereby roughening the board. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the surfaces of the first upper conveyor and the first lower conveyor be substantially smooth in order to create a smoothed surface on the board.

15. **Claims 14 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 14**, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention combining the pulling apparatus of Barry in the apparatus of Brossy that the coefficient of friction between the board and the pulling rollers would have necessarily been greater relative to the coefficient of friction between the board and the surfaces of the first upper conveyor and first lower conveyor in order that the pulling action and forward motion of the board be present. **As to Claim 28**, it would have been prima facie obvious to one of ordinary

skill in the art at the time of the invention combining the pulling apparatus of Barry in the apparatus of Brossy that the coefficient of friction between the board and the pulling rollers would have necessarily been greater relative to the coefficient of friction between the board and the surfaces of the first upper conveyor and first lower conveyor in order that the pulling action and forward motion of the board be present.

16. **Claim 29** is rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claim 15. See the rejection of Claim 15 under 35 U.S.C. 103(a). Brossy further teaches driving one of the first upper conveyor and the first lower conveyor at a speed below 5 percent faster relative to the other of the first upper and the first lower conveyor (Col. 3, Line 34-38 and Col. 5, Line 48). Therefore, the about 0.4 to about 4.0 percent faster sought by applicant in Claim 29 is encompassed by the range taught by Brossy and would have been prima facie obvious to one of ordinary skill at the time of the invention.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following are cited to indicate the state of the art at the time of the invention: Slayter (USPN 2331145), Owens and Zafiroglu (USPN 3481005), Orstam (USPN 3604344), Kielmeyer (USPN 4835045), Morrison (USPN 2997096), Thwaites (USPN 3257226), Holt (USPN 4280253), Smith (USPN 3082143), Slayter (USPN 3012923), Wong (USPN 3669638), Perry (USPN 3824086), Kielmeyer (USPN 5041178), Helbing (USPN 5601629), Soukup (USPN 5192607), MacDonald (USPN 3528875), Fekete (USPN 3730808), Brown (USPN 3508301),

Schermutzki (USPN 4790257), Simison (USPN 2216759), Slayter (USPN 2859506), Ando (USPN 4656081), Bakhshi (USPN 5458822), Loftus (USPN 5571610).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on 8:00 am - 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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